CONTENTS OF VOLUME 49, 1990

(All rights reserved)

PAGES

Nutrition and Food Processing *(Workshop: 18 November 1988)*

Food preservatives and the microbiological consequences of their reduction or omission. *T. A. Roberts & P. J. McClure* 1–12
Nutritional recommendations for *n*-3 polyunsaturated fatty acids and the challenge to the food industry. *S. M. Barlow, F. V. K. Young & I. F. Duthie* 13–21
Implications of nutritional recommendations on sugar for product development. *N. J. Jardine, D. G. Edwards & C. McMenemy* 23–30
Fibre sources for the food industry. *I. T. Johnson* 31–38
Food fortification. *D. P. Richardson* 39–50

Intracellular Calcium in the Control of Metabolism *(Symposium Proceedings: 6/7 April 1989)*

Calcium as an intracellular regulator. *Anthony K. Campbell* 51–56
Intracellular calcium ions and intramitochondrial Ca^{2+} in the regulation of energy metabolism in mammalian tissues. *James G. McCormack & Richard M. Denton* 57–75
Intracellular calcium, cell injury and relationships to free radicals and fatty acid metabolism. *M. J. Jackson* 77–81
Intra- and extracellular calcium and hypertension. *Anthony M. Heagerty* 83–90
Vitamin D and other extracellular factors in the control of growth. *Isobel P. Braidman* 91–101

Boyd Orr Memorial Lecture *(6 December 1988)*

Early nutrition and later achievement. *John Dobbing* 103–118

Diet and Cancer *(Symposium Proceedings: 26–28 July 1989)*

An overview of the epidemiological evidence linking diet and cancer. *Sir Richard Doll* 119–131
Chemical food contaminants in the initiation of cancer. *Anthony R. Tricker & Rolf Preussmann* 133–144
Alcohol and cancer. *Albert J. Tuyns* 145–151
Mechanisms and experimental and epidemiological evidence relating dietary fibre (non-starch polysaccharides) and starch to protection against large bowel cancer. *Sheila A. Bingham* 153–171
Inhibition of carcinogenesis by minor anutrient constituents of the diet. *Lee W. Wattenberg* 173–183

Thermogenesis: Mechanisms in Large Mammals *(Symposium Proceedings: 26–28 July 1989)*

The sodium pump and other mechanisms of thermogenesis in selected tissues. *J. M. Kelly & B. W. McBride* 185–202
Thyroid hormones and thermogenesis. *M. J. Dauncey* 203–215
Thermogenesis above maintenance in humans. *N. G. Norgan* 217–226
Dietary-induced thermogenesis and feed evaluation in ruminants. *E. R. Ørskov & N. A. MacLeod* 227–237

Micronutrients and Free Radicals *(Symposium Proceedings: 26–28 July 1989)*

Iron free radicals and arthritis. *David R. Blake, Peter Merry, Cliff Stevens, Alya Dabbagh, Tulin Sahinoglu, Ros Allen & Chris Morris* 239–245
Antioxidants and prooxidants in malnourished populations. *David I. Thurnham* 247–259
Fatty acids, lipid peroxidation and diseases. *Michel E. Bégin* 261–267

Inaugural Lecture, Reproduction and Growth Group *(Symposium Proceedings: 26–28 July 1989)*

Cell lineage and differentiation during growth of the early mammalian embryo. *R. L. Gardner* 269–279

Recent Studies on Food and Nutrient Intake in Ireland *(Symposium Proceedings: 13 September 1989)*

Dietary methodology: implications of errors in the measurement. *Wija A. Van Staveren & Jan Burema* 281–287
The Northern Ireland dietary survey and related studies. *J. J. Strain, Margo E. Barker, M. Barbara E. Livingstone & P. G. McKenna* 289–296
Dietary patterns in the Belfast MONICA Project. *Rosemary McClean, Evelyn McCrum, Gabriel Scally, Dorothy McMaster, Christopher Patterson, Norman Jackson & Alun Evans* 297–305
Nutrient intakes in socially disadvantaged groups in Ireland. *Pauline Lee* 307–321
Sodium and potassium intakes in Ireland. *Albert Flynn, Colette Shortt & Patrick A. Morrissey* 323–332
Nutritional surveillance in Ireland: theory and practice. *Alan Kelly* 333–341

New Substrates in Clinical Nutrition *(Symposium Proceedings: 26–28 July 1989)*

Dipeptides in clinical nutrition. *Peter Fürst, Sabine Albers & Peter Stehle* 343–359
Ketone bodies as substrates. *A. J. Rich* 361–373
New developments in fat emulsions. *Y. A. Carpentier, M. Richelle, D. Haumont & R. J. Deckelbaum* 375–380
Novel substrates and nutritional support: possible role of ornithine α-ketoglutarate. *D. B. A. Silk & J. J. Payne-James* 381–387

Nutrition Influences in the 1990s *(Symposium Proceedings: 26–28 July 1989)*

What can and what cannot be achieved by nutrition education? A challenge for the 1990s. *Kathy McManus* 389–395

Government: where does nutrition policy come from? *M. J. Wiseman* 397–401
What can and cannot be achieved by advertising. *Ann Burdus* 403–409

Growth *(Symposium Proceedings: 26–28 September 1989)*

Growth in perspective. *Peter J. Reeds & Marta L. Fiorotto* 411–420
Genetic aspects of mammalian growth and survival in relation to body size. *St C. S. Taylor* 421–422
Body composition: the precision and accuracy of new methods and their suitability for longitudinal studies. *M. F. Fuller, P. A. Fowler, G. McNeill & M. A. Foster* 423–436
Similarities and differences between mechanisms of organ and tissue growth regulation. *R. J. Goss* 437–442
Endogenous mediators of growth. *Nigel Loveridge, Colin Farquharson & Ben A. A. Scheven* 443–450
Regulation and action of insulin-like growth factors at the cellular level. *L. S. Phillips, J. B. Harp, S. Goldstein, J. Klein & C.-I. Pao* 451–458
Growth promotion in farm animals. *Peter J. Buttery & Janet M. Dawson* 459–466
Growth promoters in humans. *H. J. G. Burns* 467–472

Protein Requirements *(Symposium Proceedings: 26–28 September 1989)*

Maintenance protein requirements: the need for conceptual re-evaluation. *D. J. Millward, G. M. Price, P. J. H. Pacy & D. Halliday* 473–487
Amino acid needs and protein scoring patterns. *Peter J. Reeds* 489–497
Protein requirements of infants: an operational assessment. *J. C. Waterlow* 499–506
Protein requirements for catch-up growth. *Alan A. Jackson* 507–516

ABSTRACTS OF COMMUNICATIONS

26–28 July 1989

The nutrition and environment of the early human embryo. *A. L. Gott, K. Hardy, R. M. L. Winston & H. J. Leese* 2A
Differential effects of dietary fatty acid saturation and chain length on lipogenesis in liver and mammary gland of lactating rats. *Paulo F. A. Souza & Dermot H. Williamson* 3A
Breast-milk calcium and phosphorus concentrations of British and Gambian mothers during prolonged lactation. *Ann Prentice, M. A. Laskey, B. Dibba & J. Shaw* 4A
Background variations in breath carbon-13 enrichment in free-living infants and toddlers. *Odile Dewitt, P. R. Murgatroyd, Ann Prentice & W. A. Coward* 5A
The urinary excretion of 5-oxoproline in healthy term infants. *C. Persaud, N. Evans, N. Rutter, M. Hall, S. Smith & A. A. Jackson* 6A
The effects of gonadectomy on weight gain and corticosterone metabolism in rats. *C. J. H. Woodward, G. R. Hervey, R. E. Oakey & E. M. Whitaker* 7A

Plasma testosterone, oestradiol and sex hormone binding globulin in Indian vegetarian women compared with Caucasian vegetarians and omnivores. *Sheela Reddy, T. J. A. Key, J. W. Moore, G. M. G. Clark & T. A. B. Sanders* 8A
Testosterone, sex hormone binding globulin, and calculated free testosterone in male vegans and omnivores. *T. J. A. Key, L. S. Roe, M. Thorogood, J. I. Mann, J. W. Moore, G. M. G. Clark & D. Wang* 9A
Methane production by ruminants and its influence on the doubly-labelled water technique. *A. J. Midwood, P. Haggarty, B. A. McGaw & J. J. Robinson* 10A
Repeated periods of dieting by women using a very low energy diet. 1. Effect on metabolic rate. *Gail R. Goldberg, Susan A. Parkinson, Judith M. Savage, P. R. Murgatroyd & A. M. Prentice* 11A
Repeated periods of dieting by women using a very low energy diet. 2. Effect on body composition. *Susan A. Parkinson, Gail R. Goldberg, Judith M. Savage, P. R. Murgatroyd, W. A. Coward & A. M. Prentice* 12A
Weight changes during 7 d weighed energy intake studies in normal men. *A. C. Bruce, A. Zakary, J. Fell & G. McNeill* 13A
Energy intake and energy expenditure in post-obese women and weight-matched controls. *G. McNeill, S. G. F. Bukkens, D. C. Morrison & J. S. Smith* 14A
Resting energy expenditure in cystic fibrosis. *S. A. Wootton, J. Ellis, S. Bond & A. A. Jackson* 15A
Energy intakes and weight loss in institutionalized psychogeriatic patients. *Rhoda Sutherland, J. Rucker & S. A. Wootton* 16A
Arm circumference and energy balance in critical illness. *Ceri J. Green, T. R. Helliwell, P. McClelland, A. A. Gilbertson, R. G. Wilkes, J. M. Bone & I. T. Campbell* 17A
Plasma noradrenaline concentrations and thermogenic responses to injected noradrenaline in the rat. *A. Y. Siyamak & I. A. Macdonald* 18A
Thermic effect of artificial sweeteners in humans: aspartame. *C. A. Geissler & D. A. James* 19A
The effect of a 3 d high-fat or high-carbohydrate diet on the responses to glucose ingestion in man. *M. B. Sidery, I. W. Gallen & I. A. Macdonald* 20A
Net substrate deposition in human adipose tissue in vivo after glucose ingestion and during insulin infusion. *Keith N. Frayn, Simon W. Coppack & Sandy M. Humphreys* 21A
A modified TRAP assay to measure pro-oxidant activity in serum. *D. I. Thurnham & D. Kwiatowski* 22A
Alcohol consumption and measurements of iron status. *J. J. Strain, K. A. Thompson, M. E. Barker & P. G. McKenna* 23A
Relation of plasma levels of antioxidants and cholesterol to the risk of colorectal cancer and polyps in Ireland. *Kathryn R. O'Sullivan, P. M. Mathias, J. J. Strain, D. G. M. Carville, A. Tobin & C. O'Morain* 24A
Diet and cancer of the stomach, colon, rectum, breast and lung: a prospective cohort study. *P. A. van den Brandt, R. A. Goldbohm, P. van't Veer, R. J. J. Hermus & F. Sturmans* 25A
Alzheimer's senile dementia: potential pathogenic significance of free radical and antioxidant micronutrient interactions. *P. H. Evans, J. Klinowski, E. Yano & N. Urano* 26A

Blood antioxidant status of runners in relation to training load. *J. D. Robertson, G. G. Duthie, R. J. Maughan & P. C. Morrice* 27A
Effect of dietary α-tocopherol level on susceptibility of chicken tissues to lipid peroxidation. *P. J. A. Sheehy, P. A. Morrissey & A. Flynn* 28A
Vitamin E alters T cell subsets in elderly patients. *L. Purkins, N. D. Penn, J. Kelleher & R. V. Heatley* 29A
Immune function in vitamin E-deficient rats. *L. Purkins, J. Kelleher & R. V. Heatley* 30A
Gastric juice ascorbic acid: effects of disease, hypochlorhydria and stimulation of gastric secretion. *C. J. Schorah, J. N. Primrose, G. M. Sobala, M. J. Sanderson & M. Rogers* 31A
Selenium depletion and repletion: effects on the thyroid gland in the rat. *J. R. Arthur, F. Nicol, P. W. H. Rae & G. J. Beckett* 32A
Nitrosation of amino acids and peptides in gastric contents. *Douglas S. Annan, Brian C. Challis, John D. Harrison, Jim Iley, David L. Morris & Gillian E. Shears* 33A
Human milk: a source of potentially toxic and carcinogenic halosubstituted biphenyls. *J. T. Borlakoglu, N. J. Borlak & R. R. Dils* 34A
Arginine in benign and malignant disease of the breast and colon. *K. G. M. Park, S. D. Heys, C. I. Harris, M. A. McNurlan, R. J. Steele, O. Eremin & P. J. Garlick* 35A
Do rates of protein synthesis differ in separate biopsies from the same tumour? *S. D. Heys, K. G. M. Park, M. A. McNurlan, K. Blessing, O. Eremin & P. J. Garlick* 36A
Effect of the intestinal microflora and dietary fibre on colonic epithelial cell proliferation. *R. A. Goodlad, B. Ratcliffe, J. P. Fordham, C. Y. Lee & N. A. Wright* 37A
Stimulation of large bowel fermentation has no effects on duodenal epithelial proliferation in rats given white bread-based diets. *J. C. Mathers, Devina McClean & Fiona B. Key* 38A
Oats, gastrointestinal cell proliferation and serum cholesterol in the rat. *E. K. Lund & I. T. Johnson* 39A
Lipogenesis measured in vivo in tumour-bearing rats. *O. Obeid & P. W. Emery* 40A
Smoking and diet: is the diet of smokers different? *Janet Cade & Barrie Margetts* 41A
Comparison of the diets of smokers and non-smokers. *Margaret J. Whichelow & Sharon W. Erzinglioglu* 42A
What YOU think causes obesity. *G. P. Webb & C. A. Geissler* 43A
Effects of dietary supplementation on work performance in Gambian labourers. *E. Diaz, G. R. Goldberg, M. Taylor, J. M. Savage, D. Sellen, W. A. Coward & A. Prentice* 44A
Activity and energy expenditure of lactating women in rural Ghana. *Margaret A. Armar-Klemesu & Erica F. Wheeler* 45A
Rationing and wartime food policies in Iran. *F. Rabiee & C. A. Geissler* 46A
The effects of yeast culture on yeast numbers and fermentation in the rumen of sheep. *C. J. Newbold, P. E. V. Williams, N. McKain, A. Walker & R. J. Wallace* 47A
Protein digestibility measured by ^{15}N and homoarginine. *N. Roos, H. Hagemeister & J. Scholtissek* 48A

The movement of intact urea across the mucosa of the defunctioned human colon. *B. J. Moran, S. J. Karran & A. A. Jackson* 49A
Hypocholesterolaemic and other responses to oat bran intake in humans. *R. W. Welch, A. M. McVeigh & C. Murphy* 50A
Large bowel fermentation in rats given raw peas in the diet. *Laurentina M. R. Pedroso, J. C. Mathers & Heather J. Finlayson* 51A
Effect of raw peas on activities of key enzymes of lipid and carbohydrate metabolism in rat liver. *Laurentina M. R. Pedroso, J. C. Mathers & Heather J. Finlayson* 52A
Influence of guar gum flour of different molecular weights on viscosity of jejunal digesta in the pig. *F. G. Roberts, H. A. Smith, A. G. Low, P. R. Ellis, E. R. Morris & I. E. Sambrook* 53A
Effect of two types of guar gum in solid and liquid foods on postprandial blood glucose, plasma insulin and C-peptide in healthy subjects. *R. M. Fairchild, C. E. J. Daniels, P. R. Ellis, S. H. M. Naqvi, R. M. F. Kwan & M. A. Mir* 54A
Development and validation of a diet questionnaire for health education. *M. G. O'Donnell, M. Nelson & P. H. Wise* 55A
Energy and nutrient intakes of disabled and of elderly subjects as assessed using a combination method of dietary survey. *N. L. Bull & S. J. Gatenby* 56A
Diet and health in a random sample of British adults. *Margaret J. Whichelow & F. P. Treasure* 57A
Intakes of individual sugars in Britain. *Janet Lewis & D. H. Buss* 58A
Diet and plasma lipids in a group of vegetarians and omnivores. *L. S. Roe, M. Thorogood & J. I. Mann* 59A
What do 'vegetarians' eat? *Alizon Draper, Erica F. Wheeler & Janet Lewis* 60A
Who are 'vegetarians' and what do they think about food? *Alizon Draper, Nina Malhotra & Erica F. Wheeler* 61A
Dietary differences between social class groups in the Scottish Heart Health Study. *C. Bolton-Smith, W. C. S. Smith, M. Woodward, C. A. Brown & H. Tunstall-Pedoe* 62A
Age trends in nutrient intakes for non-manual and manual occupational groups: the Scottish Heart Health Study. *C. Bolton-Smith, W. C. S. Smith, M. Woodward & H. Tunstall-Pedoe* 63A
Sex, age and social class differences in attitudes towards consumption of high-fat foods. *R. Shepherd & G. Towler* 64A
Beliefs and attitudes toward healthier eating among women attending a maternity hospital. *Annie S. Anderson & R. Shepherd* 65A
Meeting the dietary goals: how and at what cost? *Janet Cade & Susan Booth* 66A
The interaction of vitamin A deficiency and rotavirus infection. *Faruk Ahmed, David B. Jones & Alan A. Jackson* 67A
Effects of protein deficiency on blood cell and tissue metallothionein-I concentrations in rats. *J. N. Morrison, Anne M. Wood & I. Bremner* 68A
Plasma ^{65}Zn kinetics in zinc-deficient and endotoxin-treated rats. *N. M. Lowe & M. J. Jackson* 69A
Absorption of iron and zinc from human milk in suckling and weanling rats. *M. M. Brennan, A. Flynn & P. A. Morrissey* 70A

A critical assessment of leucocyte zinc as an index of Zn status in chronically ill hospitalized elderly patients. *Helen F. Goode, N. D. Penn, J. Kelleher & B. E. Walker* 71A
The relationship between leucocyte and muscle zinc in surgical patients with and without gastrointestinal cancer. *Helen F. Goode, J. Kelleher, B. E. Walker, R. I. Hall & P. J. Guillou* 72A
Neutrophil zinc is related to the severity of hepatic damage in patients with liver disease. *Helen F. Goode, J. Kelleher & B. E. Walker* 73A
Contribution of foods eaten outside the home to nutrient intake. *J. M. Loughridge, A. D. Walker, H. Sarsby & R. Shepherd* 74A
Dietary intake and thirst in patients with chronic renal failure. *C. A. Farleigh, R. Shepherd & J. S. Pryor* 75A
Is there a North/South divide? Regional variations in the diet of British adults. *Margaret J. Whichelow & Sharon W. Erzinglioglu* 76A
Constructing a modest-but-adequate food budget for households with two adults and one child aged 1–4 years. *M. Nelson & K. Peploe* 77A
Assessment of errors in the calculation of metabolic rate from respiratory gas exchange measurements using Weir's (1949) method. *P. I. Mansell* 78A
The effect of fasting on plasma corticosterone kinetics in the anaesthetized rat. *C. J. H. Woodward, G. R. Hervey, R. E. Oakey & E. M. Whitaker* 79A
Elevated corticosterone-sensitive enzyme activities in obese Zucker rat brain. *S. C. Langley & D. A. York* 80A
A comparison of skeletal muscle mass in rabbits as measured by dissection and by creatine dilution. *Peter J. Reeds & Gerald E. Lobley* 81A
A non-invasive method for assessing muscle glycogen stores by whole-body calorimetry. *P. R. Murgatroyd, Anna Wittekind, S. Ceesay, Claire Wilson, Gail R. Goldberg & A. M. Prentice* 82A
Carbohydrate storage following muscle glycogen depletion as assessed by ^{13}C-labelled glucose. *B. J. Sonko, P. R. Murgatroyd, Gail R. Goldberg, W. A. Coward & A. M. Prentice* 83A
The effect of chronic food restriction on contractile characteristics of rat skeletal muscle. *L. B. Levy & S. A. Wootton* 84A
Analysis of isotope ratio disproportionation for evaluation of dietary requirements and of nitrogen metabolism in vivo. *H. Sick, N. Roos & N. Trugo* 85A
Assessment of body composition by segmental impedance measurements and specific resistivities. *N. J. Fuller & M. Elia* 86A
Albumin and prealbumin as nutritional indicators. *C. J. Schorah, P. Bladon & J. K. Wales* 87A

13/14 September 1989

Blood carotenoid profiles in Irish population groups. *Valerie O'Donnell, K. R. O'Sullivan & P. M. Mathias* 89A
Comparison of computerized nutrient calculations and analysed values for water, protein, fat, calcium, iron, sodium and potassium in cooked dishes eaten in Ireland. *Eavan Salmon & P. M. Mathias* 90A

The association between diet and colorectal polyps and cancer in an Irish population. *Kathryn R. O'Sullivan, P. M. Mathias, A. Tobin & C. O'Morain* 91A
Iron deficiency anaemia in long-term institutionalized elderly women in Northern Ireland. *Jill Eaton-Evans, Linda Walker, T. R. O. Beringer, D. H. Gilmore & J. J. Strain* 92A
Nutrient intakes by vegetarians in Newcastle upon Tyne. *Beatrice T. Roberts & J. C. Mathers* 93A
An evaluation of a high-fibre diet in the dietetic treatment of patients on regular haemodialysis. *Judith M. McDonald & J. J. Strain* 94A
Dietary supplementation in undernourished children with cystic fibrosis. *Alicia Pierce, A. Flynn, J. B. G. Watson & P. A. Morrissey* 95A
Macronutrient intake and digestibility in eighteen cystic fibrosis patients. *A. O'Rawe, J. Thompson, J. A. Dodge, A. O. B. Redmond & K. J. McCracken* 96A
Dietary energy intake and faecal energy excretion in normal healthy children. *Jane Murphy, Sarah Bond & S. A. Wootton* 97A
The use of antigliadin antibody assay in the assessment of dietary adherence in coeliac disease. *Eva Daly, C. P. Kelly, D. P. Nunes & M. J. Gibney* 98A
Dietary assessment of iron intake as a reflection of Fe status. *M. Collins, E. Murphy, H. Shortt & D. Gill* 99A
Adipose tissue fatty acids in patients undergoing coronary artery angioplasty. *K. Younger, B. Foley, P. Crean, G. Gearty, M. J. Gibney & M. Walsh* 100A
Vascularization in the epididymal and perirenal fat pads of young and adult mice. *J. M. Kearney & M. J. Gibney* 101A
Histological changes in brown adipose tissue associated with weight loss in obese Zucker rats resulting from the combined administration of neuropeptide Y and noradrenaline. *A. Al-Arabi & J. F. Andrews* 102A
At 30 min post-ingestion the thermic effect of feeding is increased by prior high-intensity exercise. *Niamh Buckley, Mary Kelly, B. Donne & J. F. Andrews* 103A
Increased retention of urea nitrogen in patients on total parenteral nutrition. *Brendan J. Moran, S. J. Karran & Alan A. Jackson* 104A
The intra-individual variation in urea kinetics measured in a single individual over a period of 4 years. *J. M. Hibbert & A. A. Jackson* 105A
The effect of copper deficiency on plasma homocysteine in the rat. *J. C. W. Brown, G. Mazdai, J. J. Strain & A. Hewitt* 106A
No diminution of complement activity or oxidative respiratory burst capacity with copper deficiency in the rat immune system. *G. Mazdai, J. C. W. Brown, B. M. Hannigan & J. J. Strain* 107A
Absorption of iron and zinc from soya- and cow's milk-based infant formulae in suckling rats. *M. M. Brennan, A. Flynn & P. A. Morrissey* 108A
Total peroxyl radical-trapping antioxidant potential of serum in myocardial infarction. *C. W. Mulholland & J. J. Strain* 109A
Bacterial fermentation occurs in the terminal ileum of ileostomates. *J. Dowsett, M. J. Gibney & N. P. Kennedy* 110A
Effect of α-tocopherol supplementation of sow's diet on milk α-tocopherol levels and on α-tocopherol transfer to the suckling piglet. *F. J. Monahan, P. A. Morrissey, D. J. Buckley, J. I. Gray & P. B. Lynch* 111A

The effect of heated sunflower oil on concentrations of α-tocopherol and thiobarbituric acid-reacting substances in chick tissues. *P. J. A. Sheehy, P. A. Morrissey & A. Flynn* 112A
Effect of dietary fish oil on rat lymphocyte proliferation in vitro. *D. M. Cantillon, P. A. Morrissey, T. P. O'Connor & A. Flynn* 113A
The effect of a fish oil supplement on the phospholipid fatty acid composition of plasma, platelets, neutrophils, lymphocytes and monocytes. *B. Hunter & M. J. Gibney* 114A

26–28 September 1989

Seasonal child malnutrition in Gilan, Iran: the role of maternal work load and sedative drugs. *F. Rabiee & G. Geissler* 116A
Urinary sulphates in children recovering from severe malnutrition *C. A. Michie* 117A
Ethnic and geographic variation in growth of Hong Kong Chinese infants. *S. S. F. Leung, S. Lui & D. P. Davies* 118A
Habitual exercise patterns and daily energy expenditure. *T. J. Horton & C. A. Geissler* 119A
The effect of ephedrine and aspirin on the metabolic rate of lean and obese women. *T. J. Horton & C. A. Geissler* 120A
Energy and nutrient intakes during high-altitude acclimatization. *C. E. Fenn, S. M. Dixon & L. S. Whittington* 121A
Baseline measurements for stable isotope studies. *S. D. Heys, M. A. McNurlan, K. G. M. Park, E. Milne & P. J. Garlick* 122A
The bone mineral content of Gambian and Cambridge women. *Ann Prentice, J. Shaw, M. A. Laskey, T. J. Cole & D. R. Fraser* 123A
Fermentation of wheat bran or sugar-beet fibre by human colonic bacteria growing in vitro in semi-continuous culture. *Corinne J. Rumney, C. Henderson & C. S. Stewart* 124A
Observation of anaerobic fungi in the ruminant intestine. *E. Grenet, G. Fonty, J. Jamot & F. Bonnemoy* 125A
Rusitec: a convenient device to study the digestive activity of anaerobic rumen fungi. *M. C. Hillaire & J. P. Jouany* 126A
Wheat straw degradation, in Rusitec, in the presence or absence of rumen anaerobic fungi. *M. C. Hillaire, J. P. Jouany & G. Fonty* 127A
Rumen probiosis: the effects of addition of yeast culture (viable yeast (*Saccharomyces cerevisiae*) plus growth medium) on duodenal protein flow in wether sheep. *P. E. V. Williams, A. Walker & J. C. MacRae* 128A
Some endocrine responses during heat stress induce depression of growth in young domestic fowl. *M. A. Mitchell & C. Goddard* 129A
Effect of different dietary supplemental fats and oils on growth performance and fatty acid composition of tissues in female broilers. *J. R. Scaife, Jestina Moyo, H. Galbraith & W. Michie* 130A
Differences between broiler and layer strains of chicken in the rate of adipocyte precursor proliferation. *S. C. Butterwith, L. E. Donnelly & A. J. Cryer* 131A
Is brown adipose tissue present in the pig? *P. Trayhurn, N. J. Temple & J. Van Aerde* 132A

Insulin regulates the uncoupling protein content of brown adipose tissue. *A. Geloen & P. Trayhurn* 133A
Use of a large dose, stable isotope procedure to measure muscle protein synthesis in sheep. *G. E. Lobley, A. Connell, V. Buchan, E. Milne, A. G. Calder & P. A. Skene* 134A
Measurement of tissue protein synthesis in pathological conditions of the gastrointestinal tract in man. *S. D. Heys, K. G. M. Park, M. A. McNurlan, R. A. Keenan, J. D. B. Miller, O. Eremin & P. J. Garlick* 135A
Influence of tumour necrosis factor α on blood cell and plasma metallothionein-I concentrations in rats. *I. Bremner & R. F. Grimble* 136A
Changes in protein metabolism of cultured muscle cells treated with cimaterol. *J. M. M. Harper & P. J. Buttery* 137A
Response of sheep to cimaterol and white fishmeal supplementation of diets containing sub-maintenance levels of energy. *H. Galbraith, B. Minassie & J. R. Scaife* 138A
The effects of femoral arterial infusion of cimaterol on hind-limb metabolism in growing lambs. *J. Brown, L. A. Crompton & M. A. Lomax* 139A
Reduction–oxidation state and protein turnover in rats treated with a non-selective β-agonist. *J. A. Martinez, A. S. Del Barrio, M. P. Portillo, M. J. Rguez-Mariscal & J. Larralde.* 140A
Effect of lactation products on brush-border enzyme expression in sucking pigs. *D. Kelly, T. P. King & M. McFadyen* 141A
Effect of lactation on the postnatal expression of intestinal membrane glycoconjugates in pigs. *T. P. King & D. Kelly* 142A
Effects of long-term (2 year) feeding of rats on raw soya bean. *G. Grant* 143A
Phaseolus vulgaris lectin (PHA) induces growth of rat small intestine. *A. Pusztai, G. Grant, S. W. B. Ewen, D. S. Brown & S. Bardocz* 144A
Nutritional evaluation of sweet lupinseed (*Lupinus angustifolius*). *P Yen, G. Grant, M. F. Fuller & A. Pusztai* 145A
Effects of cellulose, pectin and guar gum on gastric emptying, digestibility and absorption in resting dogs. *V. de Haan, L. Istasse, S. Jakovljevic, I. Dufrasne & J. M. Bienfait* 146A
Effects of cellulose, pectin and guar gum on plasma insulin and metabolites in resting dogs. *L. Istasse, V. de Haan, J. F. Beckers, C. Van Eenaeme & J. M. Bienfait* 147A
Systemic carnitine deficiency: an animal model produced by haemodialysis of sheep. *A. M. Snoswell, R. C. Fishlock, W. B. Runciman & R. Carapetis* 148A
Zinc in breast milk: a fractionation study, and comparison between communities. *C. J. Bates & Harumi Tsuchiya* 149A
Plasma methylmalonate and urocanate as indicators of defects in vitamin B_{12}-dependent metabolism in cobalt-deficient sheep. *J. Price* 150A
Regulation of long bone growth in vitro: effects of insulin-like growth factor-1 and growth hormone. *Ben A. A. Scheven & Nicola J. Hamilton* 151A
Investigation of the effects of insulin-like growth factor-1 and age on cartilage growth using *in situ* biochemical techniques. *Colin Farquharson & Nigel Loveridge* 152A

Effects of growth hormone and nutrient interactions on ovine adipose tissue metabolism. *A. Walsh, C. Elcock, M. Gill, D. E. Beever & J. M. Pell* 153A
Influence of intravenous glucose infusion on basal and growth hormone-stimulated plasma concentrations of insulin-like growth factor-1 in lambs. *G. V. Kriel, M. J. Bryant & M. A. Lomax* 154A
Interactions between protein supply and the effect of growth hormone administration on plasma insulin-like growth factor-1 concentrations in infusion-maintained lambs. *J. C. MacRae, J. E. Inkster, L. A. Bruce, F. D. DeB. Hovell & T. Atkinson* 155A
Nutritional control of circulating insulin-like growth factor-1 and growth hormone concentrations in growing pigs. *J. M. Fletcher, P. T. Quinlan & A. D. Heath* 156A
The influence of dietary composition on the growth of the domestic cat. *K. E. Earle, H. S. Munday & P. M. Smith* 157A

16/17 November 1989

Effect of protein deficiency on circulating protein concentrations during the acute phase response to injury. *G. Jennings & M. Elia* 159A
Which cytokine modulates the acute phase response to elective surgery and accidental injury? *E. A. Pullicino, F. Carli, B. Rafferty, S. Poole, S. T. A. Malik & M. Elia* 160A
Serum interleukin-6 and C-reactive protein response to elective surgery of varying magnitude. *Anne M. Cruickshank, W. D. Fraser, H. G. J. Burns & A. Shenkin* 161A
The effect of human interleukin-1β on rat liver protein synthesis compared with a systemic inflammatory insult induced by turpentine. *P. E. Ballmer, M. A. McNurlan, B. G. Southorn, I. Grant & P. J. Garlick* 162A
Adrenalectomy reverses the impaired pyrogenic responses to interleukin-1β in obese Zucker rats. *N. J. Busbridge, J. A. Carnie, M. J. Dascombe, J. A. Johnston & N. J. Rothwell* 163A
Coconut oil feeding suppresses hypothalamic prostaglandin E_2 production in response to tumour necrosis factor α and endotoxin. *D. Bibby & R. F. Grimble* 164A
Stimulation of colorectal tumour protein synthesis, in vivo, by nutritional support. *S. D. Heys, K. G. M. Park, M. A. McNurlan, E. Milne, R. A. Keenan, J. D. B. Miller, J. Broom, O. Eremin & P. J. Garlick* 165A
The effect of feeding and fasting on human colonic tumours in vitro. *K. G. M. Park, S. D. Heys, O. Eremin & P. J. Garlick* 166A
Reduced rates of hepatic protein synthesis, the acute phase protein response, and elevated circulating interleukin-6 and tumour necrosis factor in advanced malignancy. *K. C. H. Fearon, D. C. McMillan, T. Preston, P. Winstanley, A. M. Cruickshank & A. Shenkin* 167A
The effect of arginine on the growth of experimental tumours. *K. G. M. Park, S. D. Heys, K. Blessing, O. Eremin & P. J. Garlick* 168A

Effects of corticosteroid therapy on quadriceps protein synthesis and intramuscular prostaglandin concentration in patients with rheumatoid arthritis. *J. N. A. Gibson, N. L. Poyser & M. J. Rennie* 169A

Metabolic effects of lipid infusion in septic and non-septic humans. *J. Arnold, K. A. Shipley, N. A. Scott, R. A. Little & M. H. Irving* 170A

Post-operative ketosis: relationship to serum non-esterified fatty acids, carnitine and metabolic hormone concentrations. *P. J. Moynihan, Christine M. Williams & V. Marks* 171A

Nutritional requirements in fulminant hepatic failure. *Alastair Forbes, George K. Grimble, Claire Wicks, David B. A. Silk & Roger Williams* 172A

A controlled trial of sip-feed supplements in orthopaedic patients: post-discharge clinical outcome in relation to supplementation and compliance. *Lynn T. Driver, M. Lumbers, J. Older & Christine M. Williams* 173A

Do 'novel' enteral substrates improve nitrogen economy following surgical stress in dogs? *M. G. Brown, G. R. Campbell & B. J. Rowlands* 174A

Effect of glutamine infusions on muscle glutamine concentration and protein synthetic rate in rat muscle. *Monica Wusteman & Marinos Elia* 175A

Are intracellular glutamine concentrations related to muscle protein synthesis during dietary restrictions? *K. Khan, M. Wusteman & M. Elia* 176A

Comparative studies of the defunctioned and functioning colon in patients with a defunctioning colostomy confirm human colonic permeability to urea. *Brendan Moran, Steven Karran & Alan A. Jackson* 177A

Dietary reduction increases secretion in rat distal colon induced by secretagogues acting via calcium but not cyclic AMP. *Helen C. Nzegwu & R. J. Levin* 178A

[^{15}N]phenylalanine and L-[1-^{13}C]leucine leg exchange and plasma kinetics during amino acid infusion and euglycaemic hyperinsulinaemia: evidence for stimulation of muscle and whole-body protein synthesis in man by insulin. *William M. Bennet, Alan A. Connacher, Charles M. Scrimgeour, Roland T. Jung & Michael J. Rennie* 179A

Amino acids promote net phenylalanine balance and protein synthesis in legs of anaesthetized young pigs independently of insulin or glucagon. *P. W. Watt, Y. Lindsay & M. J. Rennie* 180A

Plasma leucine turnover and oxidation in critically ill patients: lack of a relationship to energy expenditure. *Therese A. Samuels, J. Conor Devlin, Ceri J. Green, Leslie J. Hipkin, Iain T. Campbell & Michael J. Rennie* 181A

Effect of volatile anaesthetic agents on liver protein synthesis. *K. Ferguson, S. D. Heys, A. C. Norton, C. R. Dundas & P. J. Garlick* 182A

Protein synthesis in human term placenta, umbilical cord and uterus. *P. F. W. Chien, P. W. Watt, D. J. Taylor & M. J. Rennie* 183A

C-reactive protein, sickness scores and energy expenditure in critical illness. *A. E. Murray, M. Bell, Ceri J. Green, P. McClelland, S. M. Mostafa & I. T. Campbell* 184A

For how long and how often should oxygen consumption be measured in the ventilated patient to assess 24 h energy expenditure? *Ceri J. Green, Brenda Phillips, P. McClelland & I. T. Campbell* 185A

Energy expenditure in the severely traumatized patient: early experience. *P. Blair, G. G. Lavery, J. D. Smillie, H. N. McLeod, R. S. J. Clarke & B. J. Rowlands* 186A

The effect of underfeeding for 7 d on thermogenesis and glucose metabolism during infusion of glucose and insulin in healthy women. *I. W. Gallen, M. Donaldson & I. A. Macdonald* 187A

Glucose-induced thermogenesis is reduced in myotonia dystrophica. *I. W. Gallen & I. A. Macdonald* 188A

Brown adipose tissue activity in children in relation to disease state. *J. Bruce, C. C. Childs, A. C. Cooper & N. J. Rothwell* 189A

Modification by clenbuterol of muscle atrophy induced by unilateral femur fracture plus protein–energy deficiency in the rat. *J. J. Choo, M. A. Horan, R. A. Little & N. J. Rothwell* 190A

Relationship of post-surgical ketosis and nitrogen loss to anthropometric and biochemical indices of nutritional status on admission to hospital. *Christine M. Williams, P. J. Moynihan & D. Teale* 191A

Ketone body metabolism during starvation. *S. Wood, K. Khan, E. A. Pullicino & M. Elia* 192A

Lipoprotein lipase activity in tissues of tumour-bearing rats. *O. Obeid & P. W. Emery* 193A

Whole-body protein homeostasis and protein requirements in man: validation studies of a new metabolic model. *Gillian Price, D. J. Millward, P. J. H. Pacy & D. Halliday* 194A

Assessment of body composition by bioelectrical impedance compared with anthropometry, total body potassium and tritiated water dilution. *R. A. Richardson, K. C. H. Fearon, W. Watson, R. Hume & A. Shenkin* 195A

Evaluation of simple predictive methods for assessing body composition: comparison with deuterated water technique. *E. A. Pullicino, W. A. Coward & M. Elia* 196A

Assessment of body composition: near infra-red interactance. *M. Elia, S. A. Parkinson & E. Diaz* 197A

The recovery of labelled carbon dioxide during a 36 h continuous infusion of bicarbonate in man. *N. J. Fuller, P. R. Murgatroyd & M. Elia* 198A

Total body water measurement in children with growth disorders. *J. W. Gregory, S. A. Greene, C. M. Scrimgeour & M. J. Rennie* 199A

The bromide space in endotoxaemia: a poor reflection of extracellular volume? *R. J. Hannon & V. E. Boston* 200A

The time dependence of nitrous oxide interference in ^{13}C and ^{18}O isotope ratio measurements in breath and plasma after inhalation by mask. *J. M. Barua, C. M. Scrimgeour, I. M. Mackay & M. J. Rennie* 201A

Use of a hypoallergenic casein hydrolysate diet in the rehabilitation of severely malnourished Gambian children with chronic diarrhoea. *P. G. Lunn, C. A. Northrop-Clewes & P. B. Sullivan* 202A

Urea production rates with two different amino acid solutions. *C. A. Ponting & A. J. W. Sim* 203A

Prevention and management of venous thrombosis complicating central parenteral nutrition: a clinical audit. *G. Barclay, K. Brady, J. R. Richards & G. R. Pennington* 204A
The oxygen content of total parenteral nutrition mixtures stored in different container systems. *G. Hardy, R. Hems & G. Mari* 205A

29/30 March 1990

Protein utilization during energy undernutrition in steers. *S. A. Chowdhury, E. R. Ørskov & N. A. MacLeod* 208A
Effect of nutritional level and body condition on susceptibility of N'Dama cattle to *Trypanosoma congolense* infection in The Gambia. *D. A. Little, R. H. Dwinger, D. J. Clifford, A. S. Grieve, S. Kora & M. Bojang* 209A
Sodium supplementation and phosphorus supplementation of lactating N'Dama cows under village husbandry conditions in The Gambia. *D. A. Little, K. Agyemang, J. van Rompaey, G. van Isterdael & B. Badji* 210A
Differential response in rat gut hypertrophy to inclusion of guar gum and volatile fatty acid salts in the diet. *Laurentina M. R. Pedroso, J. C. Mathers & Heather J. Finlayson* 211A
Effects of guar gum or volatile fatty acid salts on activities of key enzymes for lipid synthesis in livers from rats given starch- or sucrose-containing diets. *Laurentina M. R. Pedroso, J. C. Mathers & Heather J. Finlayson* 212A
Role of bovine milk lactoperoxidase system in *Escherichia coli* diarrhoea – development of a model using the early-weaned pig. *K. J. McCracken, J. J. O'Brien & K. Anantharaman* 213A
The 'anabolic' effect of subcutaneous testosterone implants in rats. *C. J. H. Woodward, G. R. Hervey, R. E. Oakey & E. M. Whitaker* 214A
Effect of energy restriction on the relationship between body fat and food intake in broilers. *A. Y. Yalda & J. M. Forbes* 215A
Photoperiodic changes in food intake and rumen function in Soay rams. *C. Ebong & R. N. B. Kay* 216A
Growth and food intake responses of broiler and layer chickens to diets of different protein contents, and a choice of protein contents. *F. Shariatmadari & J. M. Forbes* 217A
The ability of broiler chickens to regulate protein intake when offered a choice of diets containing different levels of protein. *F. Shariatmadari & J. M. Forbes* 218A
The influences of meal composition on subsequent food selection in broiler and layer chickens. *F. Shariatmadari & J. M. Forbes* 219A
Associations of breed and nematodiasis with intake of a free-access mineral mixture by grazing lambs. *N. Suttle & J. Brebner* 220A
Effect of hepatic portal infusion of propionate or equivalent saline loads on food intake in sheep. *D. A. H. Farningham* 221A
Cholecystokinin effects on wet and dry meals in pigs. *D. V. Rayner & S. Miller* 222A
The effect of the oestrous cycle in rats on carbohydrate consumption. *H. Gillian Anantharaman-Barr, J. Decombaz, B. Decarli & K. Anantharaman* 223A

Energy intake and basal metabolic rate in lean and overweight women during the menstrual cycle. *H. Gillian Anantharaman-Barr, Patricia E. Pollet & Isabelle Bartholdi* 224A
Food knowledge and 'healthy' diets in people with and without coronary heart disease. *C. Bolton-Smith, M. Woodward, W. C. S. Smith & H. Tunstall-Pedoe* 225A
Dietary organic anions can make a significant contribution to the total fermentable material in the human large intestine. *T. H. J. Florin, G. Neale & J. H. Cummings* 226A
Role of the sympathetic nervous system in the regulation by insulin of the level of uncoupling protein in brown adipose tissue. *A. Géloën & P. Trayhurn* 227A
The influence of meal composition and frequency of intake on the thermic effect of food. *Joyce Kinabo & J. V. G. A. Durnin* 228A
Adaptation to a low-protein intake in normal adults: increased production and hydrolysis of urea. *M. Langran, B. J. Moran & A. A. Jackson* 229A
Urinary 5-oxoproline in term and preterm neonates as an index of glycine status. *C. Persaud, N. Evans, M. Hall, N. Rutter, S. Smith & A. A. Jackson* 230A
The effect of interactions of soluble (pectin) and insoluble (wheat bran) dietary fibres on caecal short-chain fatty acids and caecal tissue weight in the rat. *E. F. Armstrong, M. A. Eastwood & W. G. Brydon* 231A

INDEXES

Index of Authors 517
Index of Subjects 531